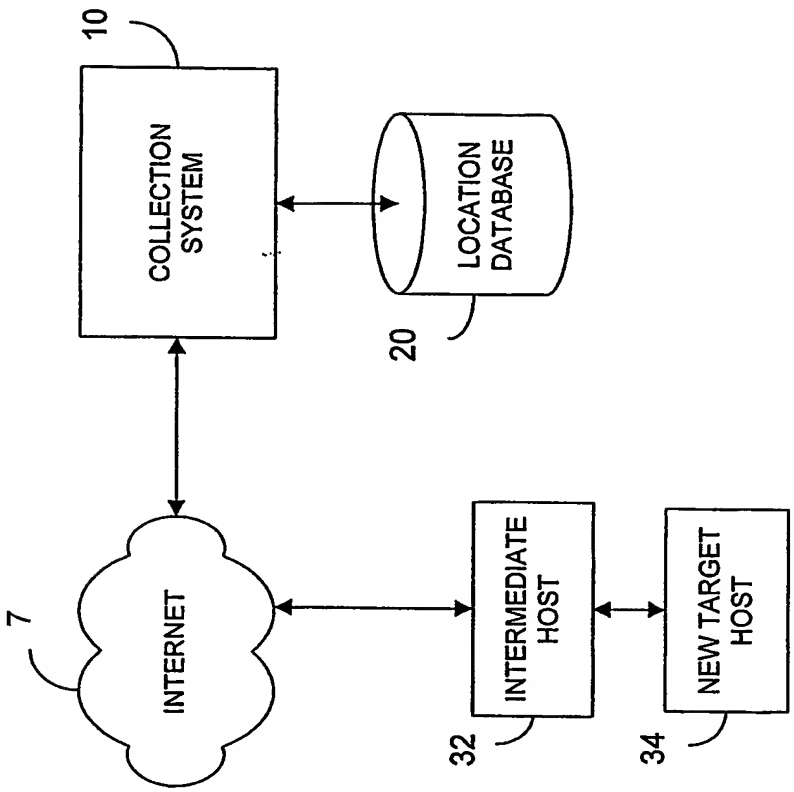
10
COLLECTION SYSTEM
LOCATION DATABASE
20
7
INTERNET
INTERMEDIATE HOST
32
NEW TARGET HOST
34

FIGURE 1

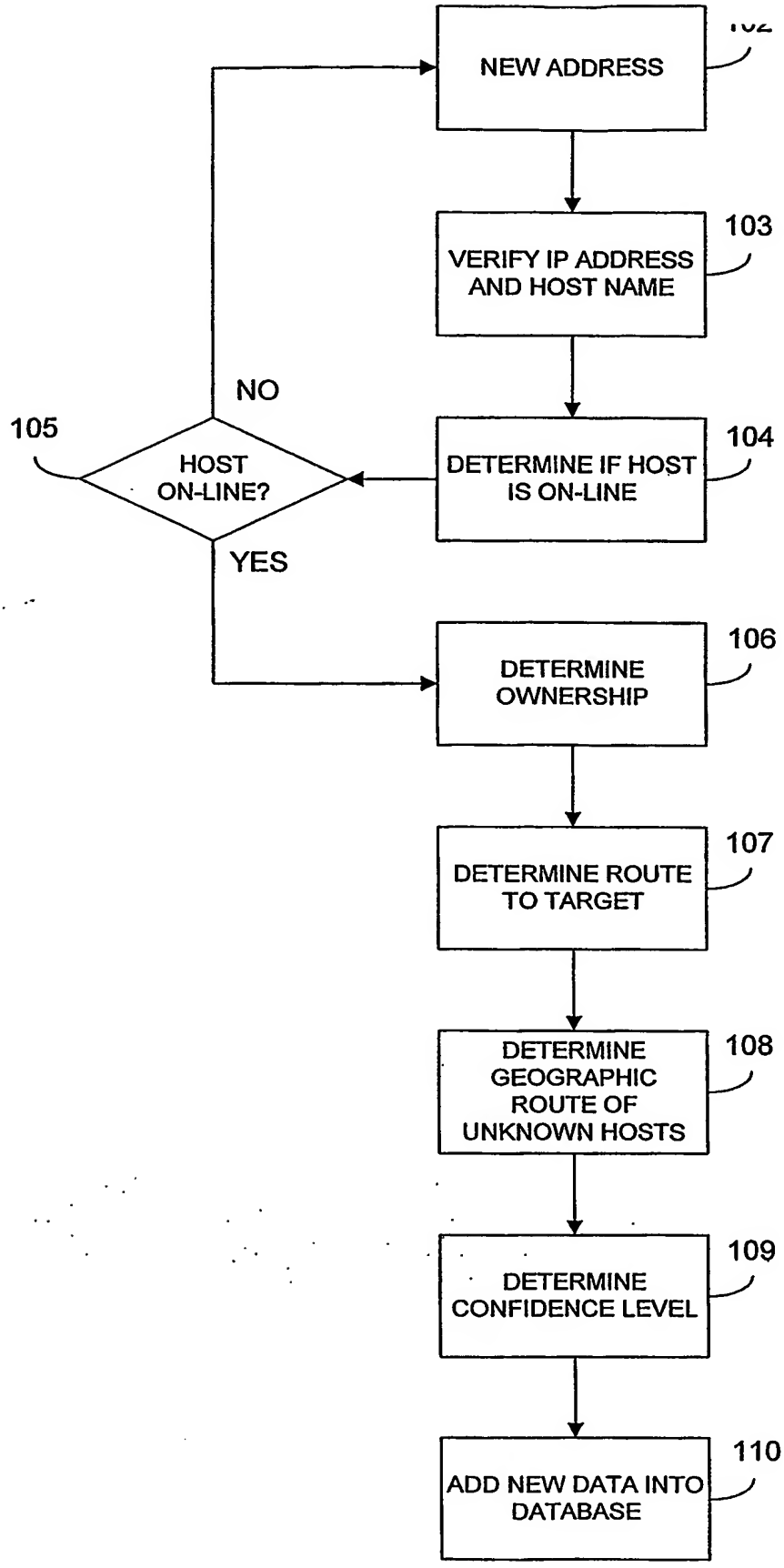
100
NEW ADDRESS
VERIFY IP ADDRESS AND HOST NAME
103
DETERMINE IF HOST IS ON-LINE
104
HOST ON-LINE?
105
NO
YES
DETERMINE OWNERSHIP
106
DETERMINE ROUTE TO TARGET
107
DETERMINE GEOGRAPHIC ROUTE OF UNKNOWN HOSTS
108
DETERMINE CONFIDENCE LEVEL
109
ADD NEW DATA INTO DATABASE
110

FIGURE 2

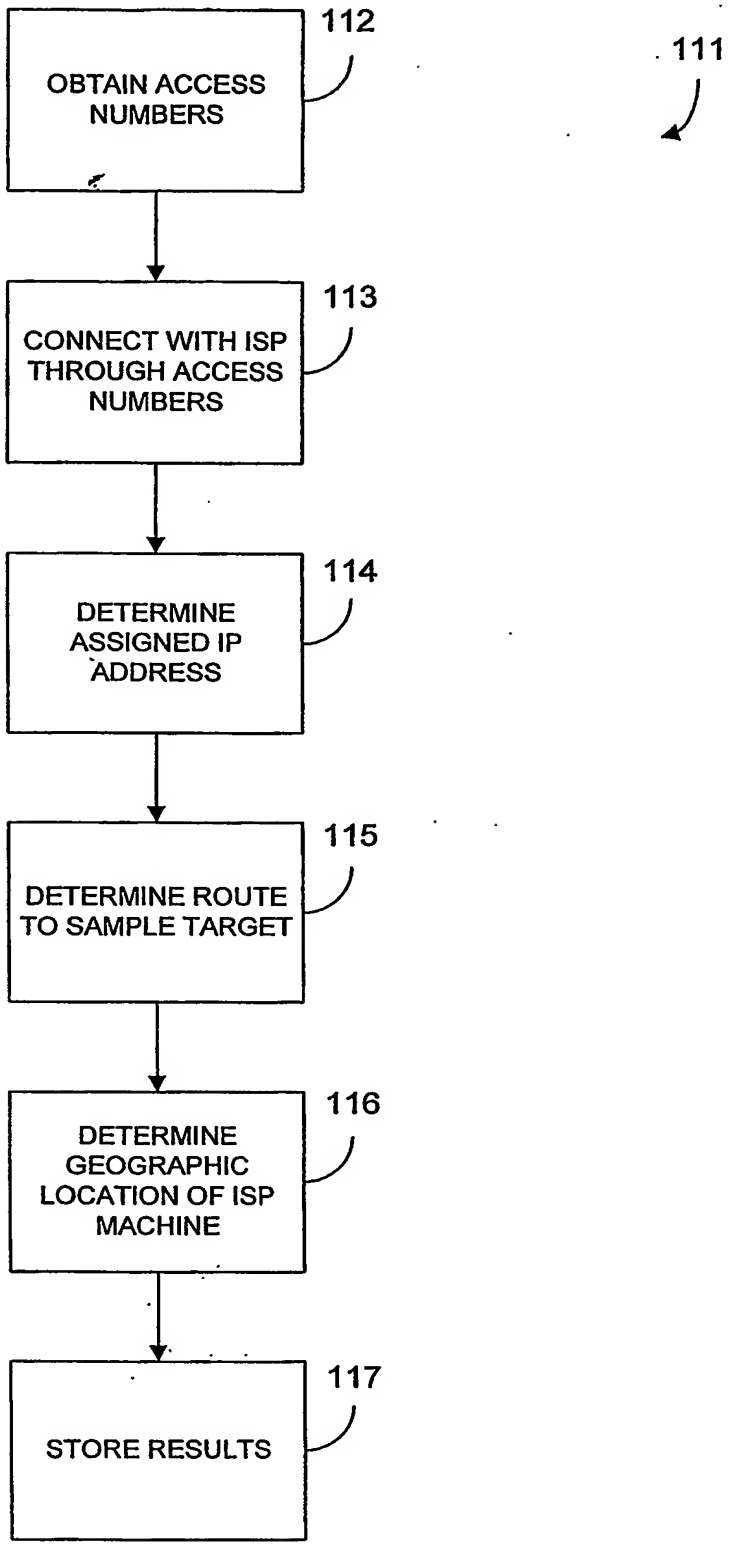
111
112
OBTAIN ACCESS NUMBERS
113
CONNECT WITH ISP THROUGH ACCESS NUMBERS
114
DETERMINE ASSIGNED IP ADDRESS
115
DETERMINE ROUTE TO SAMPLE TARGET
116
DETERMINE GEOGRAPHIC LOCATION OF ISP MACHINE
117
STORE RESULTS

FIGURE 3

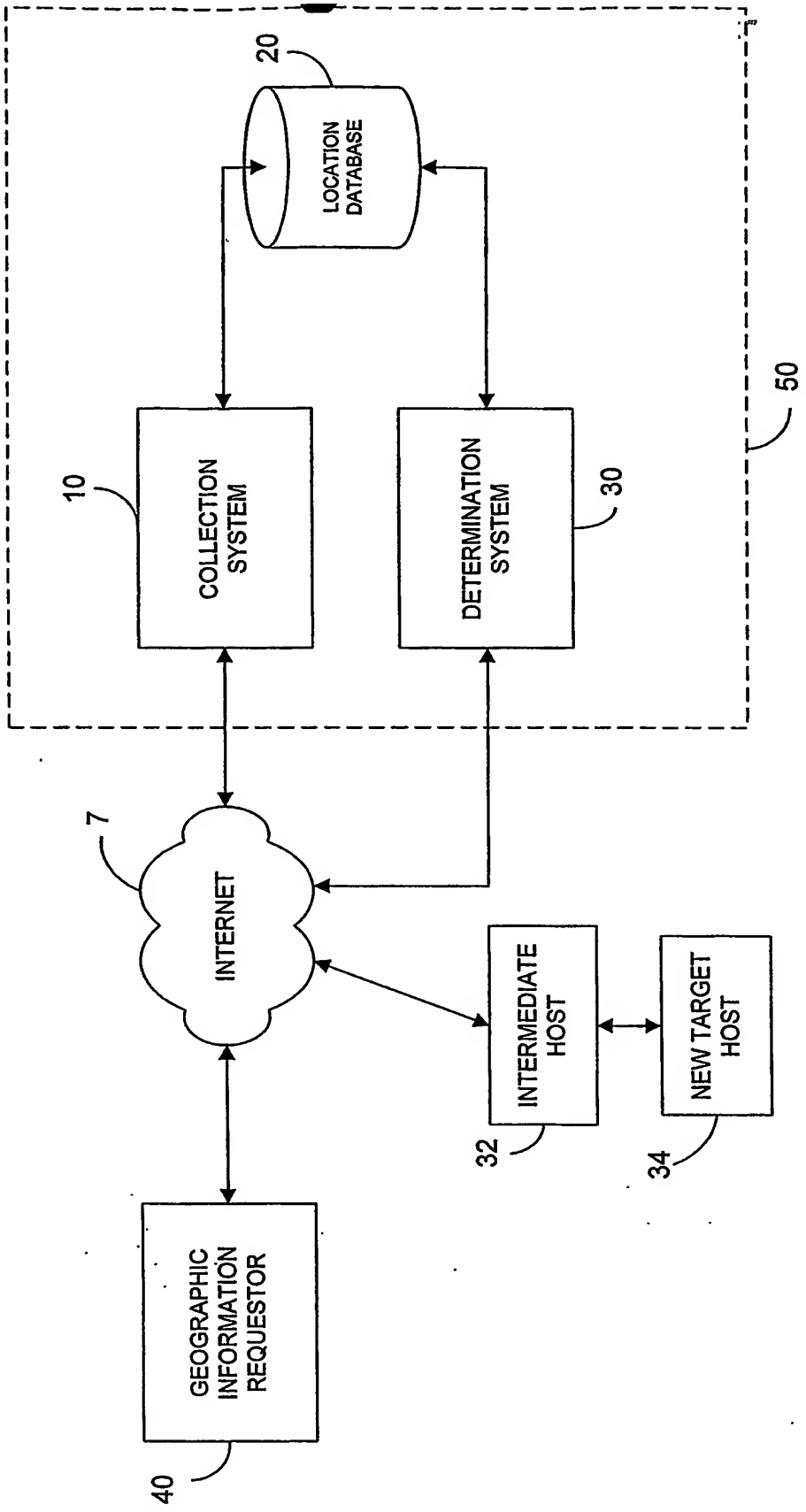
20
LOCATION DATABASE
50
10
COLLECTION SYSTEM
DETERMINATION SYSTEM
30
7
INTERNET
INTERMEDIATE HOST
NEW TARGET HOST
32
34
GEOGRAPHIC INFORMATION REQUESTOR
40

FIGURE 4

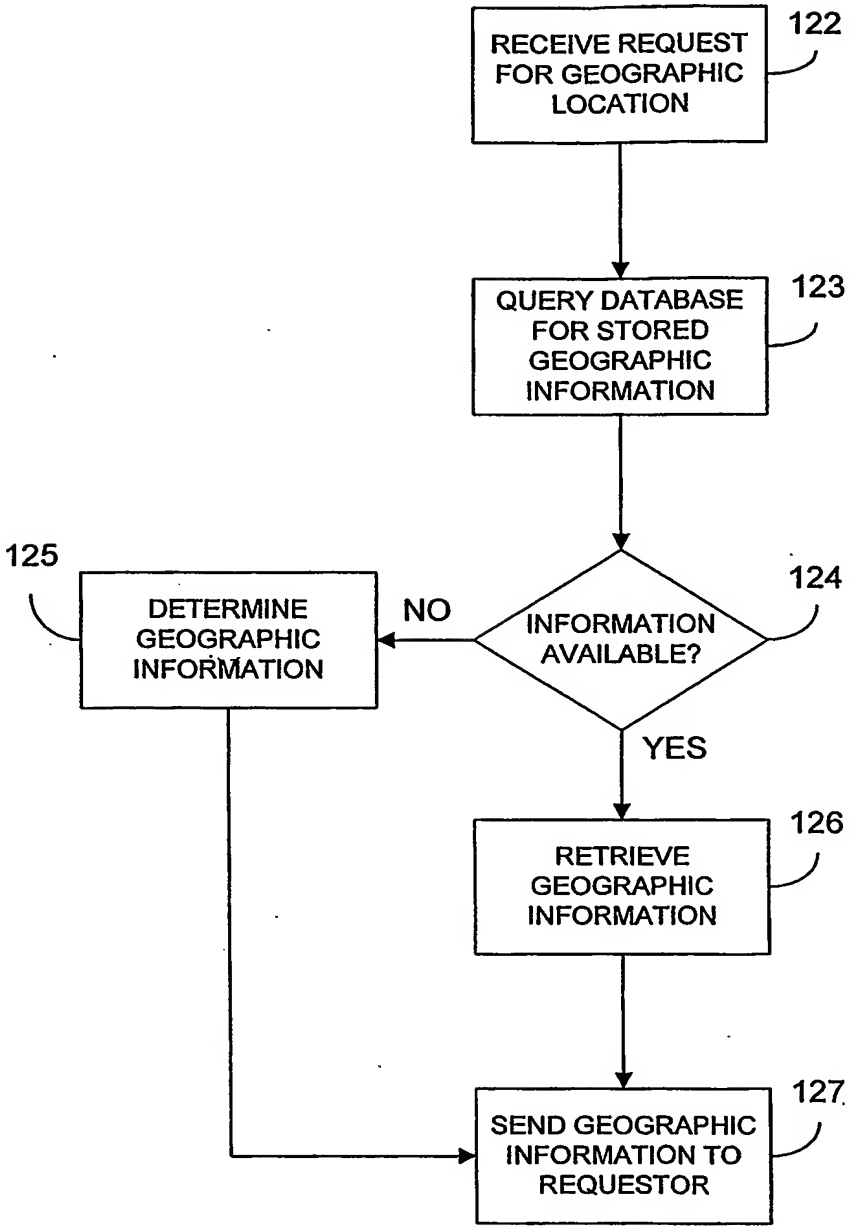
RECEIVE REQUEST FOR GEOGRAPHIC LOCATION
122
120
QUERY DATABASE FOR STORED GEOGRAPHIC INFORMATION
123
INFORMATION AVAILABLE?
124
NO
DETERMINE GEOGRAPHIC INFORMATION
125
YES
RETRIEVE GEOGRAPHIC INFORMATION
126
SEND GEOGRAPHIC INFORMATION TO REQUESTOR
127

FIGURE 5

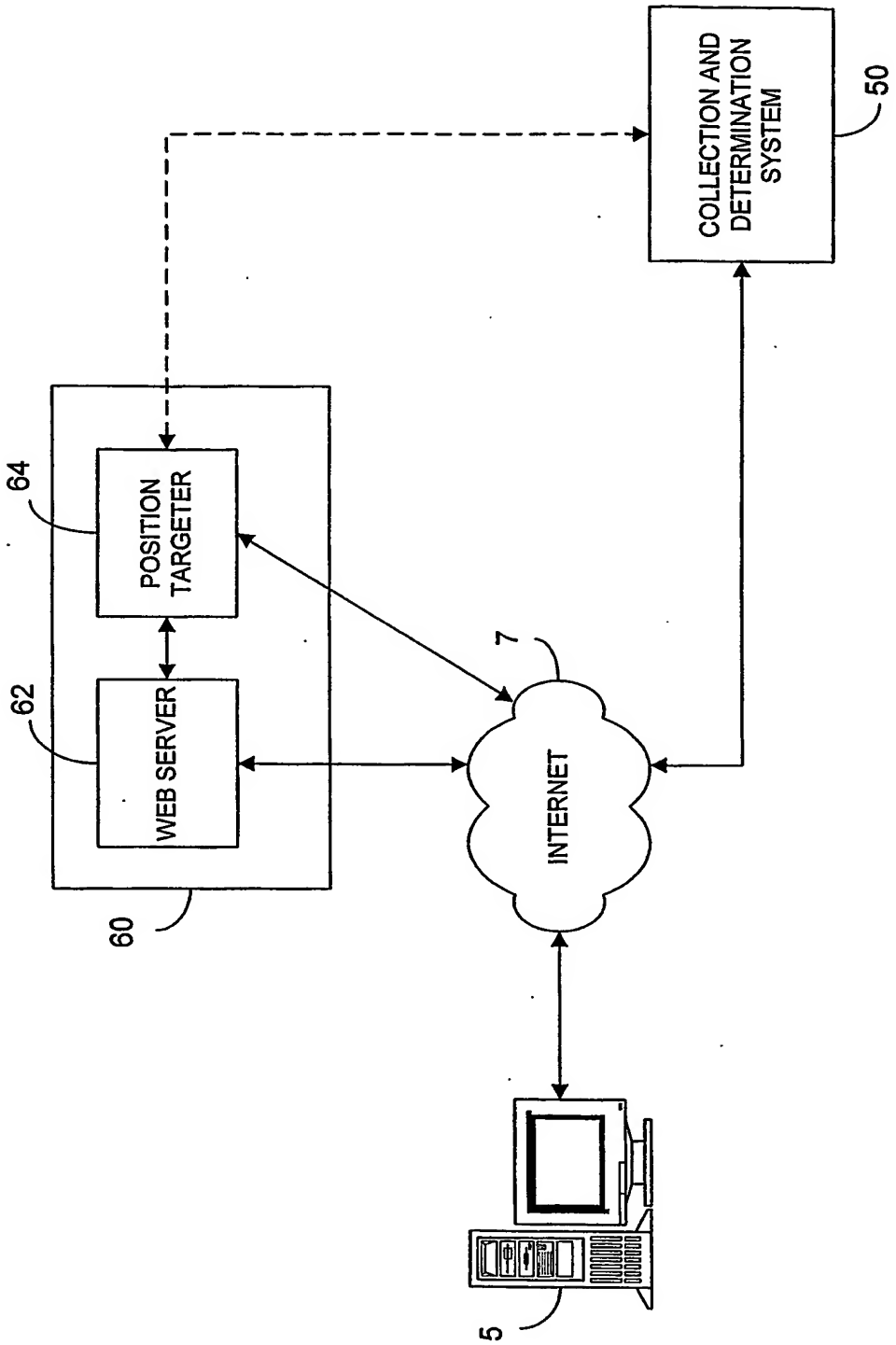
COLLECTION AND DETERMINATION SYSTEM
50
64
POSITION TARGETER
62
WEB SERVER
60
7
INTERNET
5

FIGURE 6

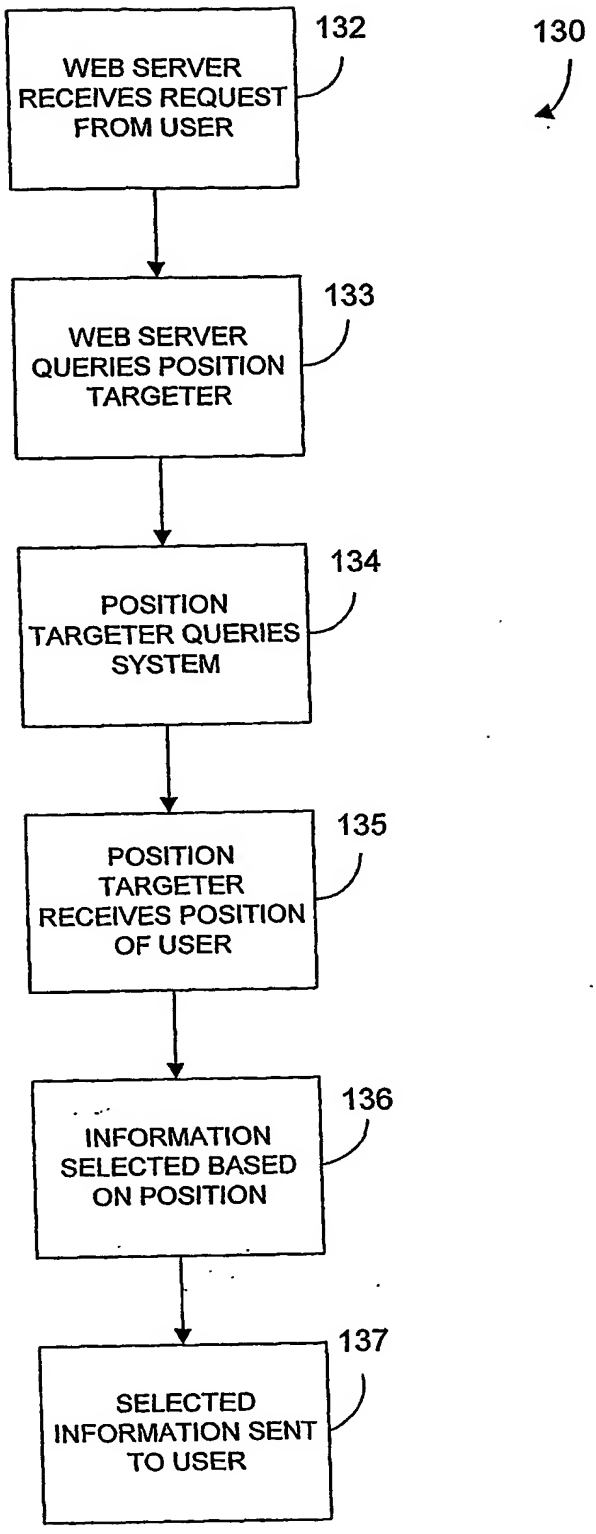
130
132
WEB SERVER RECEIVES REQUEST FROM USER
133
WEB SERVER QUERIES POSITION TARGETER
134
POSITION TARGETER QUERIES SYSTEM
135
POSITION TARGETER RECEIVES POSITION OF USER
136
INFORMATION SELECTED BASED ON POSITION
137
SELECTED INFORMATION SENT TO USER

FIGURE 7

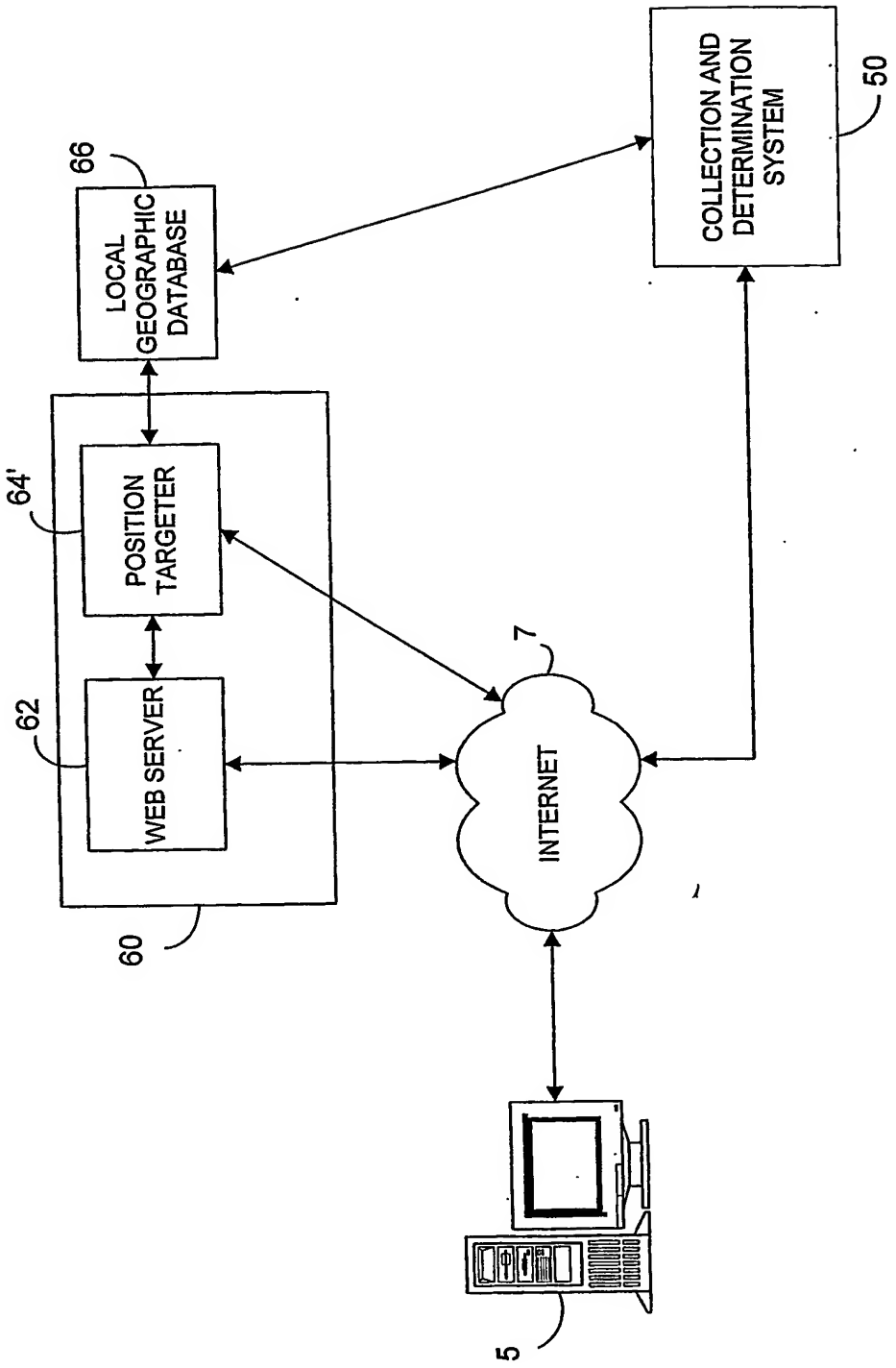
COLLECTION AND DETERMINATION SYSTEM
50
66
LOCAL GEOGRAPHIC DATABASE
64'
POSITION TARGETER
62
WEB SERVER
60
7
INTERNET
5

FIGURE 8

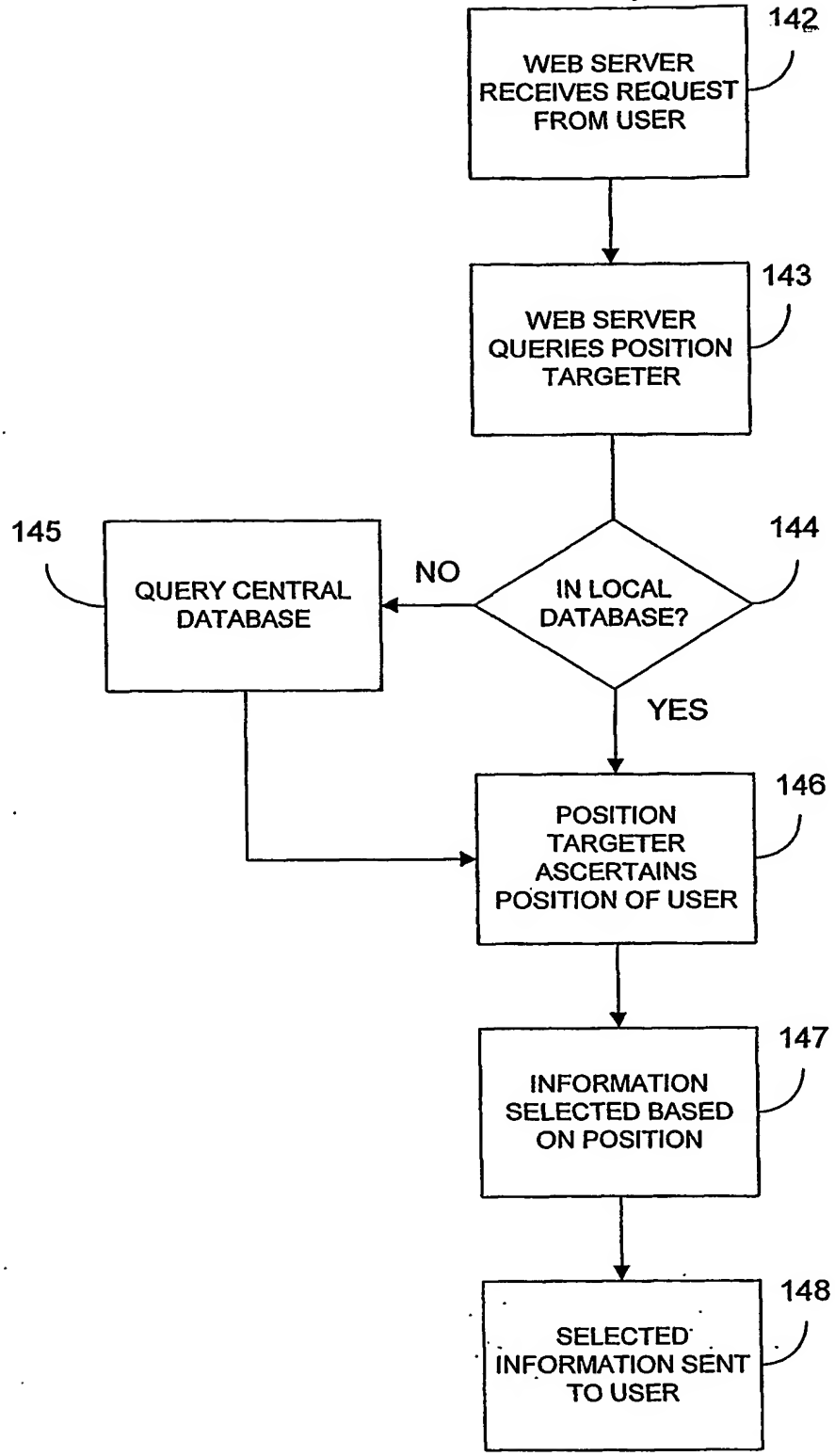
140
142
WEB SERVER RECEIVES REQUEST FROM USER
143
WEB SERVER QUERIES POSITION TARGETER
144
IN LOCAL DATABASE?
NO
145
QUERY CENTRAL DATABASE
YES
146
POSITION TARGETER ASCERTAINS POSITION OF USER
147
INFORMATION SELECTED BASED ON POSITION
148
SELECTED INFORMATION SENT TO USER

FIGURE 9

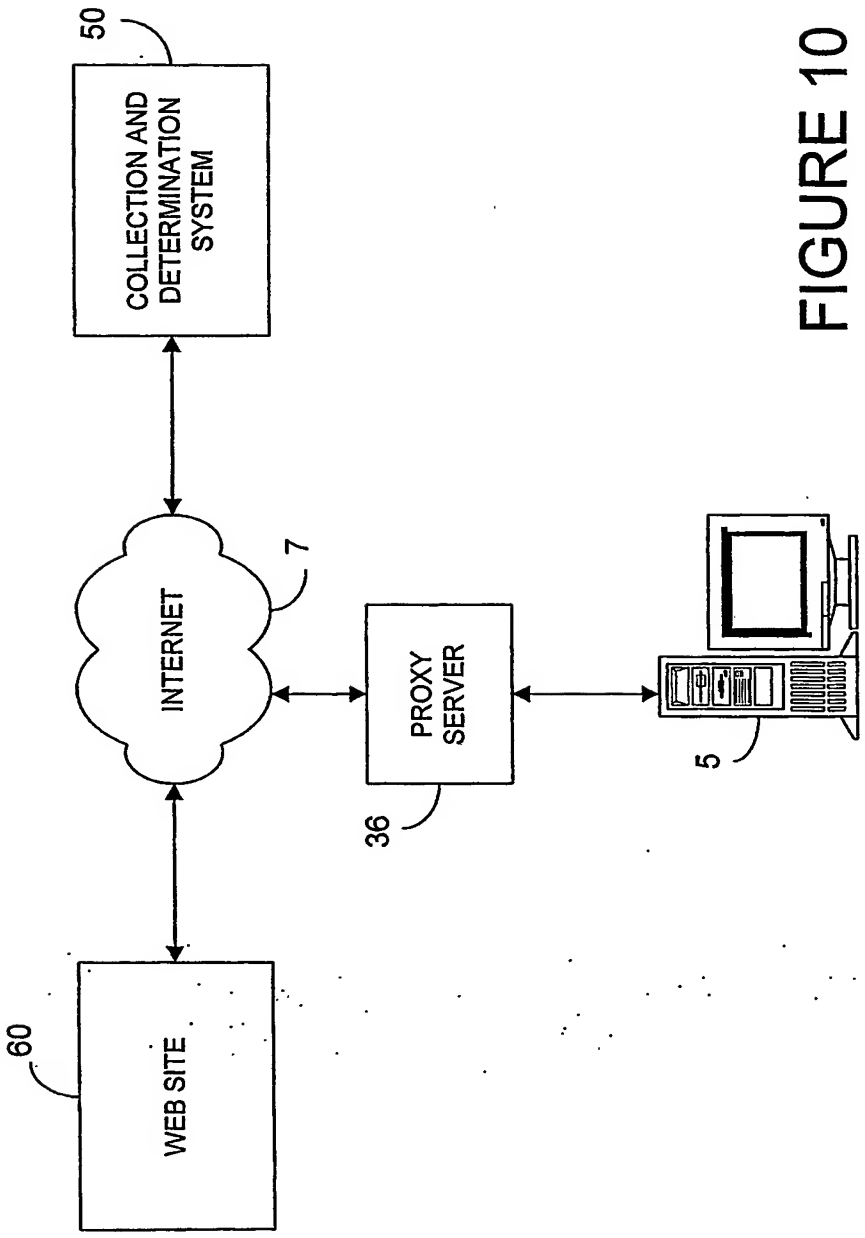
50
COLLECTION AND DETERMINATION SYSTEM
INTERNET
7
PROXY SERVER
36
5
WEB SITE
60

FIGURE 10

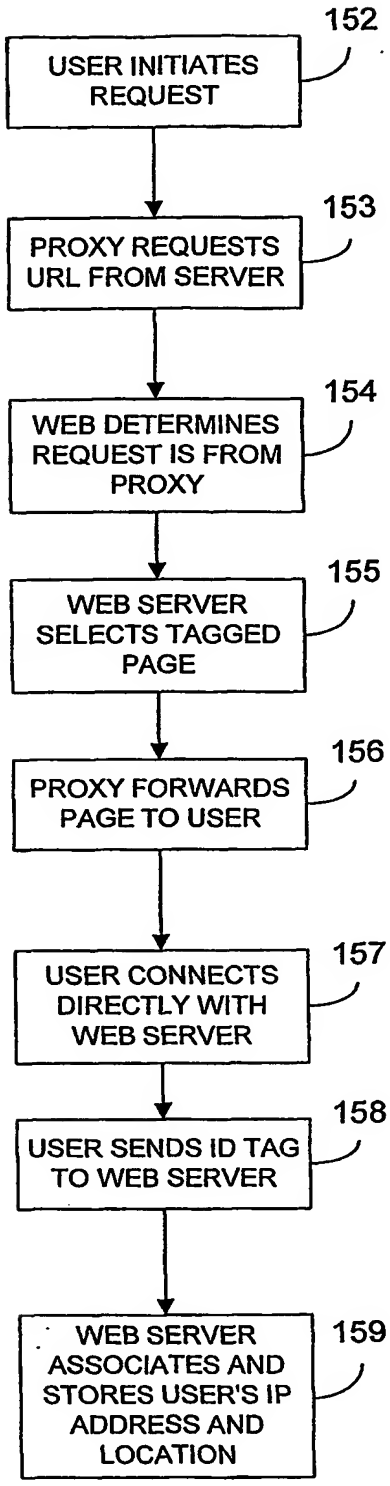
150
152
USER INITIATES REQUEST
153
PROXY REQUESTS URL FROM SERVER
154
WEB DETERMINES REQUEST IS FROM PROXY
155
WEB SERVER SELECTS TAGGED PAGE
156
PROXY FORWARDS PAGE TO USER
157
USER CONNECTS DIRECTLY WITH WEB SERVER
158
USER SENDS ID TAG TO WEB SERVER
159
WEB SERVER ASSOCIATES AND STORES USER'S IP ADDRESS AND LOCATION

FIGURE 11

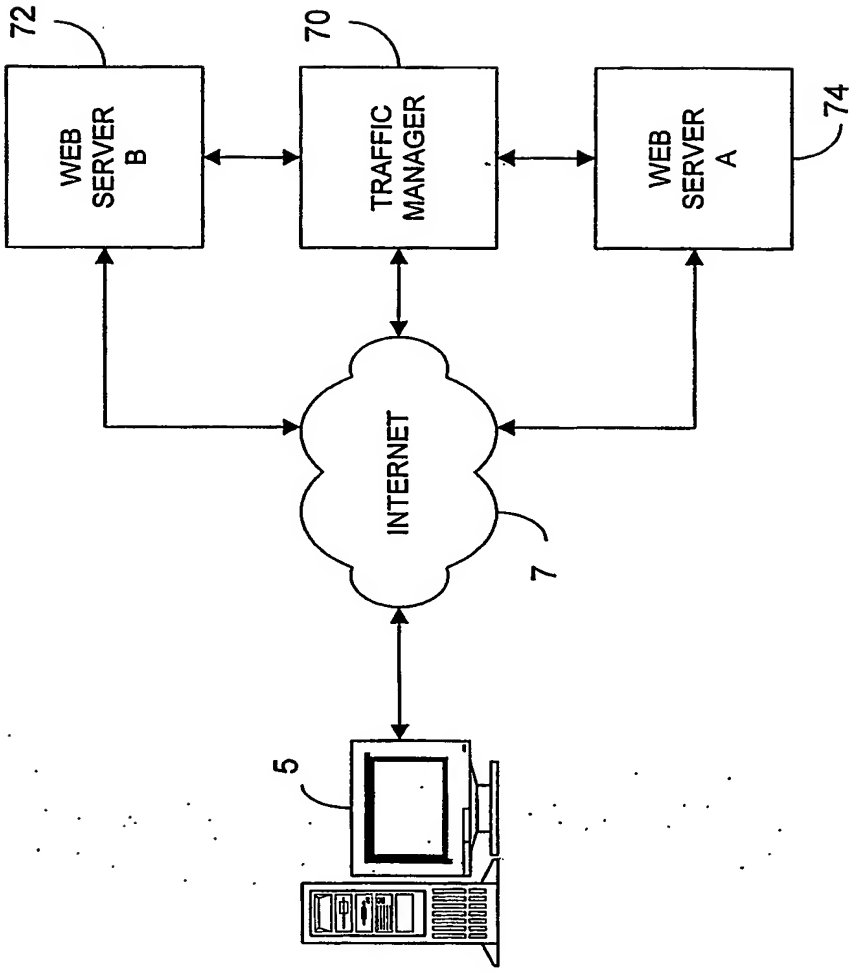
72
WEB SERVER B
70
TRAFFIC MANAGER
74
WEB SERVER A
INTERNET
7
5

FIGURE 12(A)

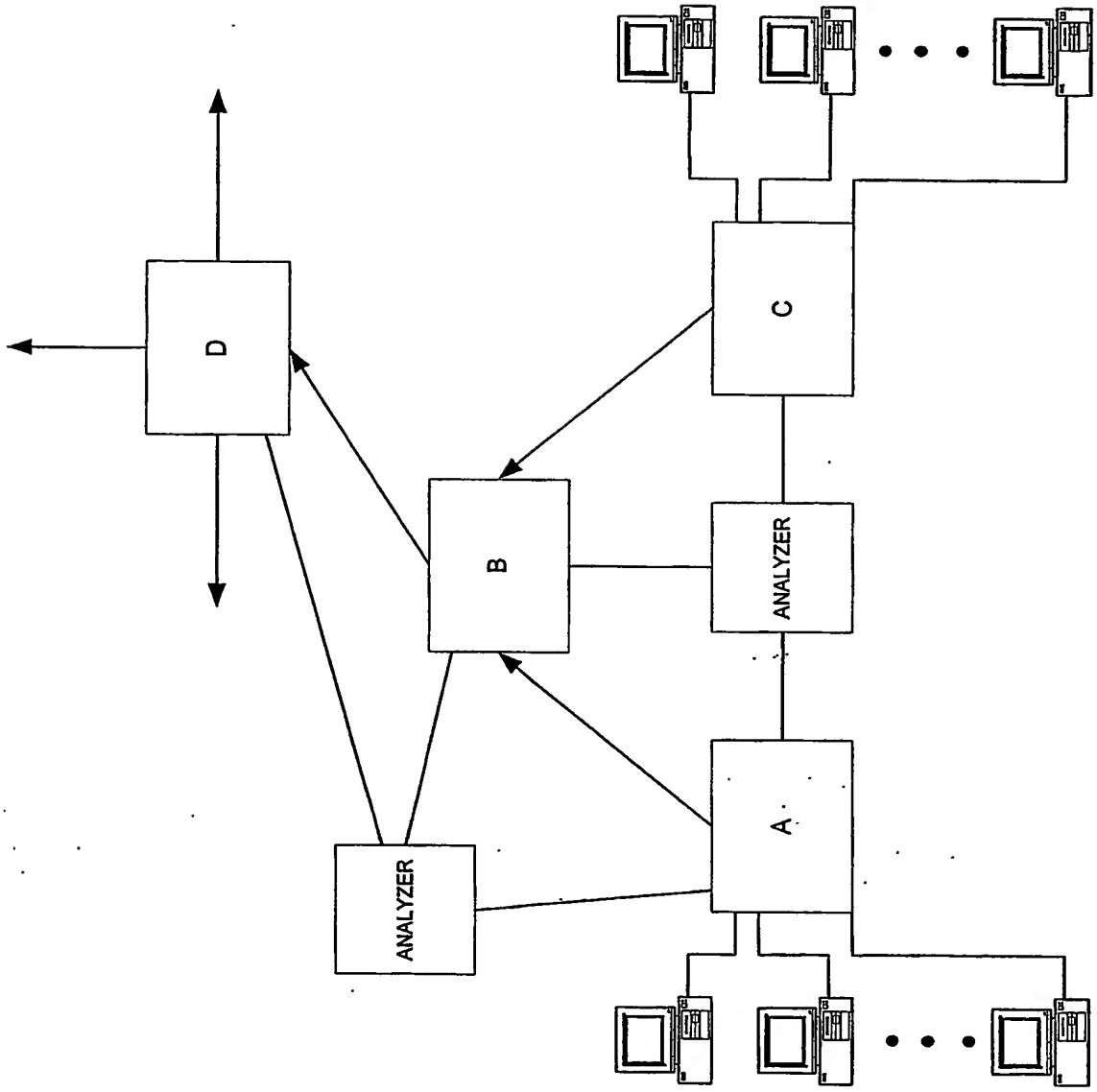

FIGURE 12(B)

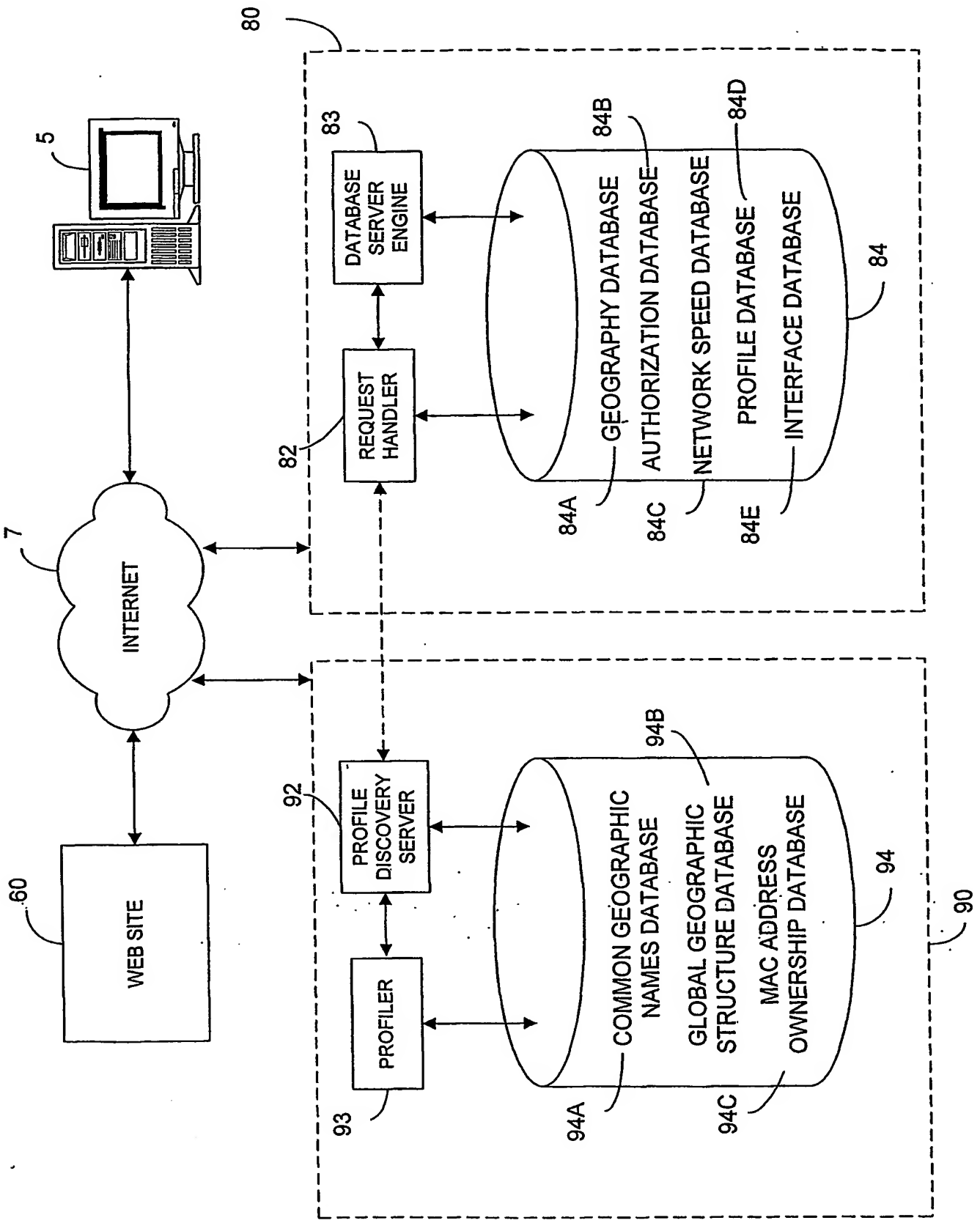
80
5
83
DATABASE SERVER ENGINE
84B
84D
REQUEST HANDLER
82
GEOGRAPHY DATABASE
AUTHORIZATION DATABASE
NETWORK SPEED DATABASE
PROFILE DATABASE
INTERFACE DATABASE
84
84A
84C
84E
7
INTERNET
92
PROFILE DISCOVERY SERVER
94B
COMMON GEOGRAPHIC NAMES DATABASE
GLOBAL GEOGRAPHIC STRUCTURE DATABASE
MAC ADDRESS OWNERSHIP DATABASE
94
90
60
WEB SITE
PROFILER
93
94A
94C

FIGURE 13

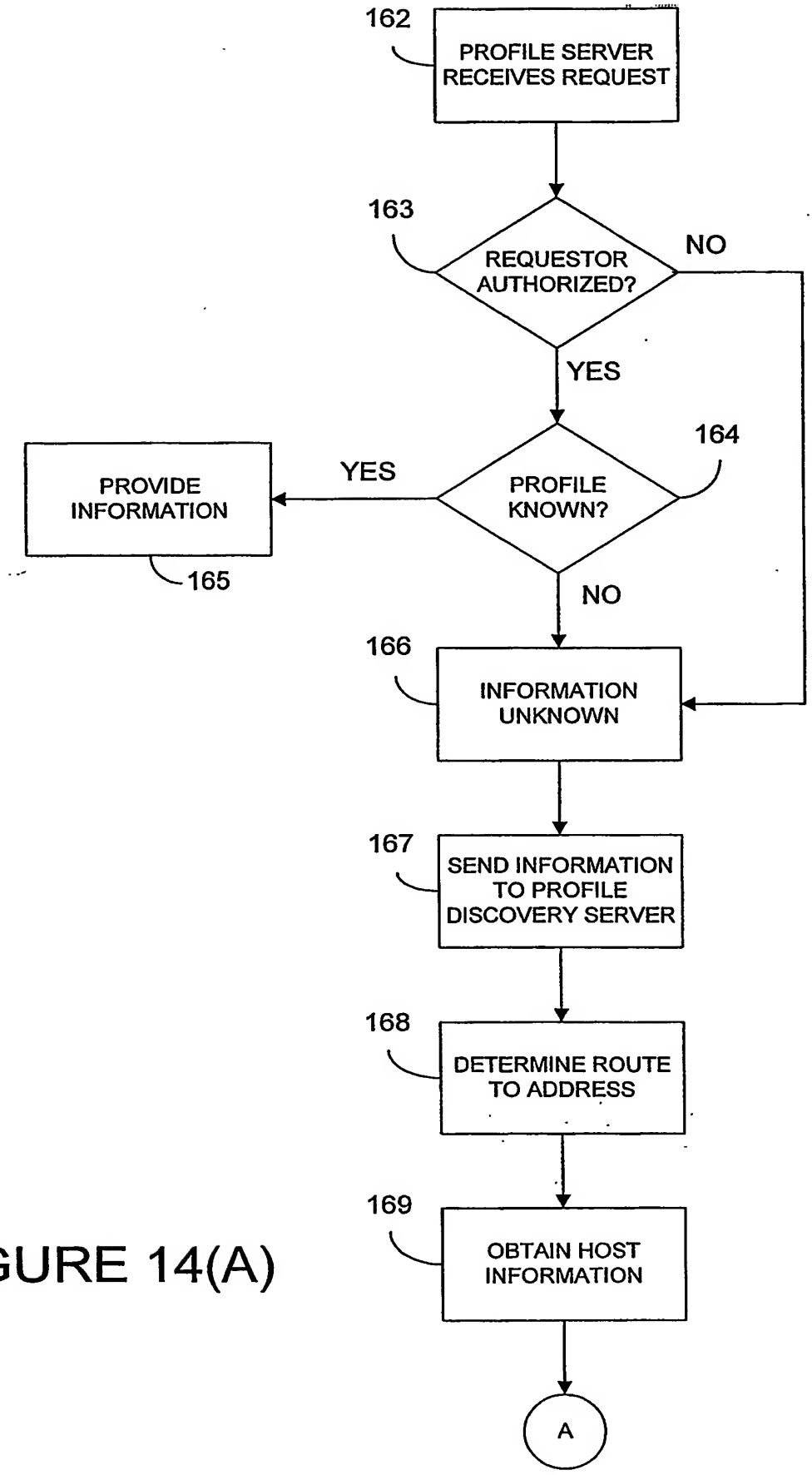
162
PROFILE SERVER RECEIVES REQUEST
163
REQUESTOR AUTHORIZED?
NO
YES
164
PROFILE KNOWN?
YES
PROVIDE INFORMATION
165
NO
166
INFORMATION UNKNOWN
167
SEND INFORMATION TO PROFILE DISCOVERY SERVER
168
DETERMINE ROUTE TO ADDRESS
169
OBTAIN HOST INFORMATION
A

FIGURE 14(A)

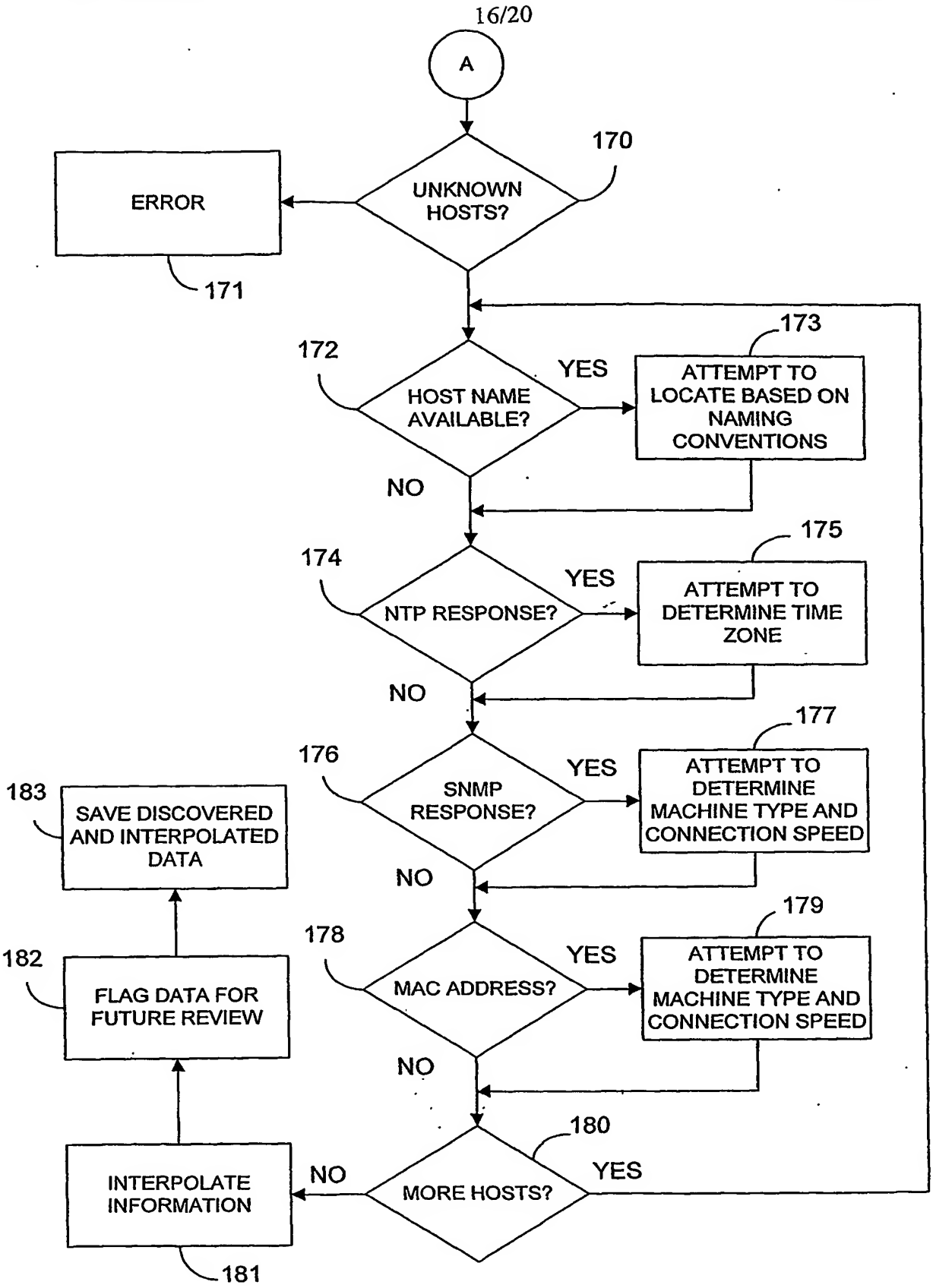
A
UNKNOWN HOSTS?
170
ERROR
171
HOST NAME AVAILABLE?
172
YES
ATTEMPT TO LOCATE BASED ON NAMING CONVENTIONS
173
NO
NTP RESPONSE?
174
YES
ATTEMPT TO DETERMINE TIME ZONE
175
NO
SNMP RESPONSE?
176
YES
ATTEMPT TO DETERMINE MACHINE TYPE AND CONNECTION SPEED
177
NO
MAC ADDRESS?
178
YES
ATTEMPT TO DETERMINE MACHINE TYPE AND CONNECTION SPEED
179
NO
MORE HOSTS?
180
NO
YES
INTERPOLATE INFORMATION
181
FLAG DATA FOR FUTURE REVIEW
182
SAVE DISCOVERED AND INTERPOLATED DATA
183

FIGURE 14(B)

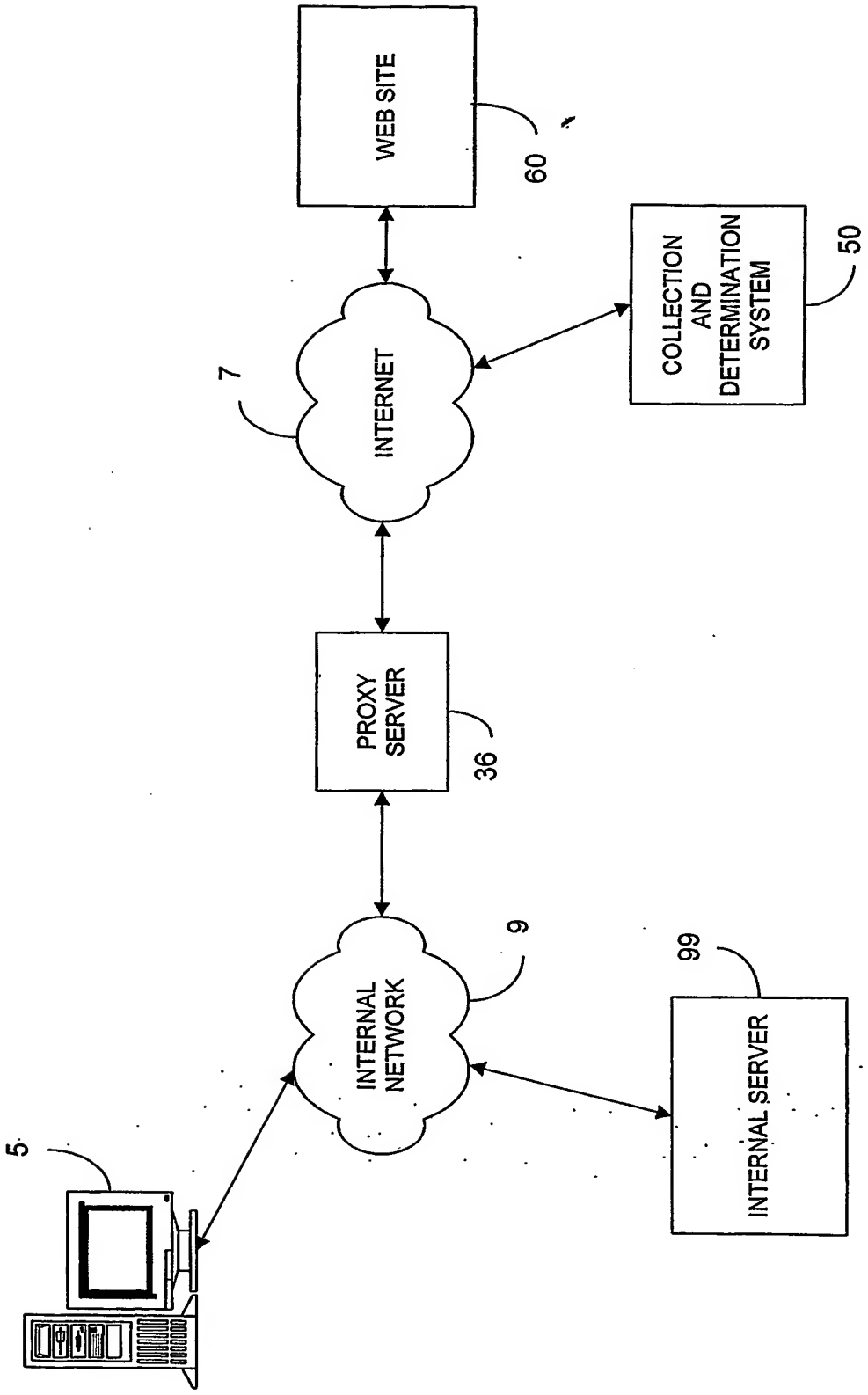
WEB SITE
60
COLLECTION AND DETERMINATION SYSTEM
50
INTERNET
7
PROXY SERVER
36
INTERNAL NETWORK
9
INTERNAL SERVER
99
5

FIGURE 15

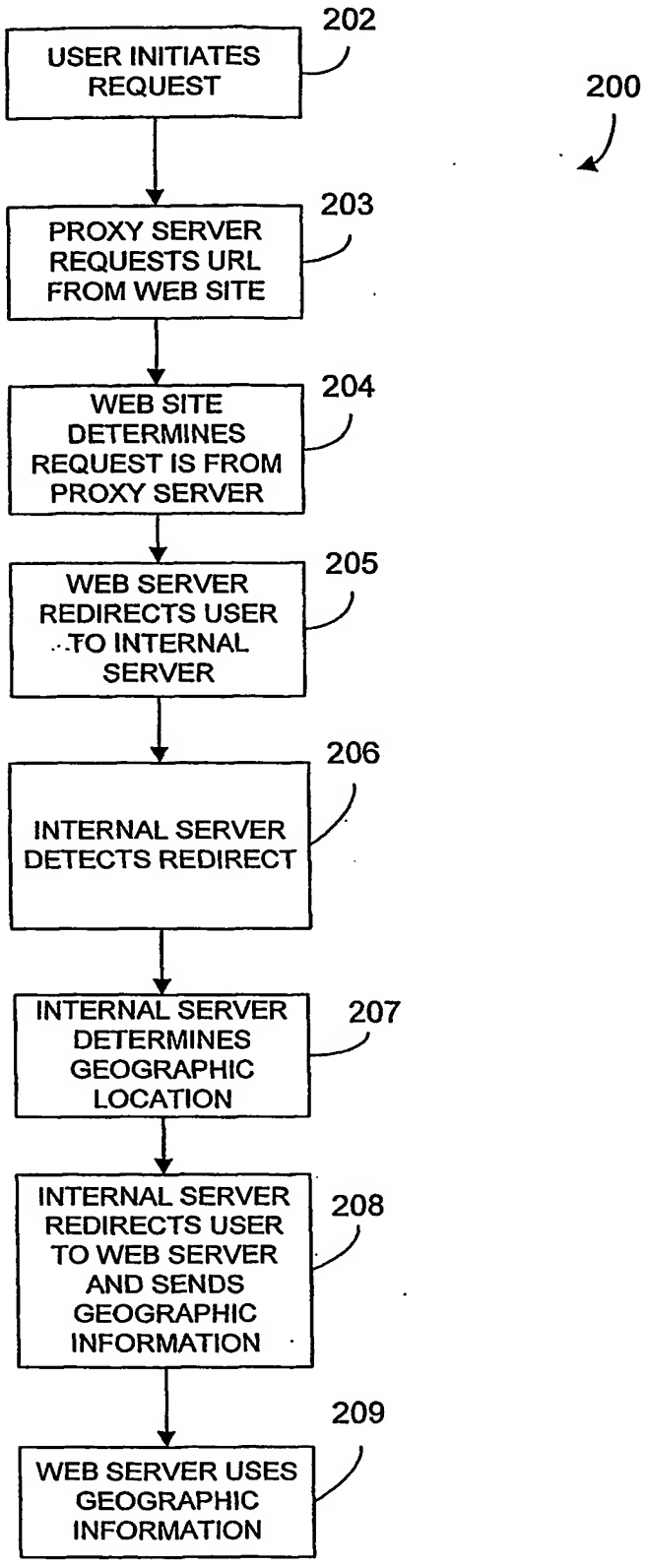
200
202
USER INITIATES REQUEST
203
PROXY SERVER REQUESTS URL FROM WEB SITE
204
WEB SITE DETERMINES REQUEST IS FROM PROXY SERVER
205
WEB SERVER REDIRECTS USER TO INTERNAL SERVER
206
INTERNAL SERVER DETECTS REDIRECT
207
INTERNAL SERVER DETERMINES GEOGRAPHIC LOCATION
208
INTERNAL SERVER REDIRECTS USER TO WEB SERVER AND SENDS GEOGRAPHIC INFORMATION
209
WEB SERVER USES GEOGRAPHIC INFORMATION

FIGURE 16

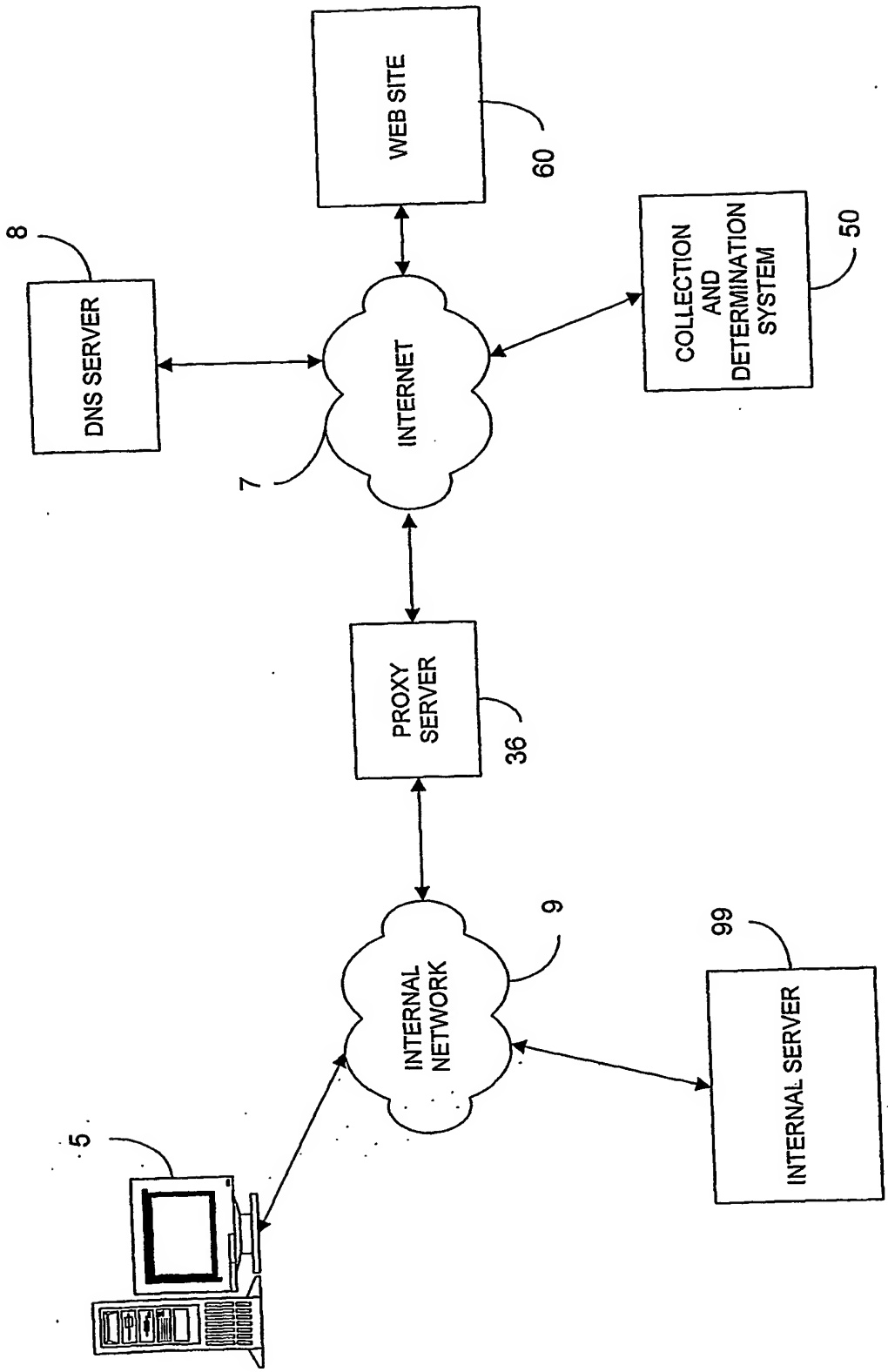
WEB SITE
60
8
DNS SERVER
INTERNET
7
COLLECTION AND DETERMINATION SYSTEM
50
PROXY SERVER
36
9
INTERNAL NETWORK
99
INTERNAL SERVER
5

FIGURE 17

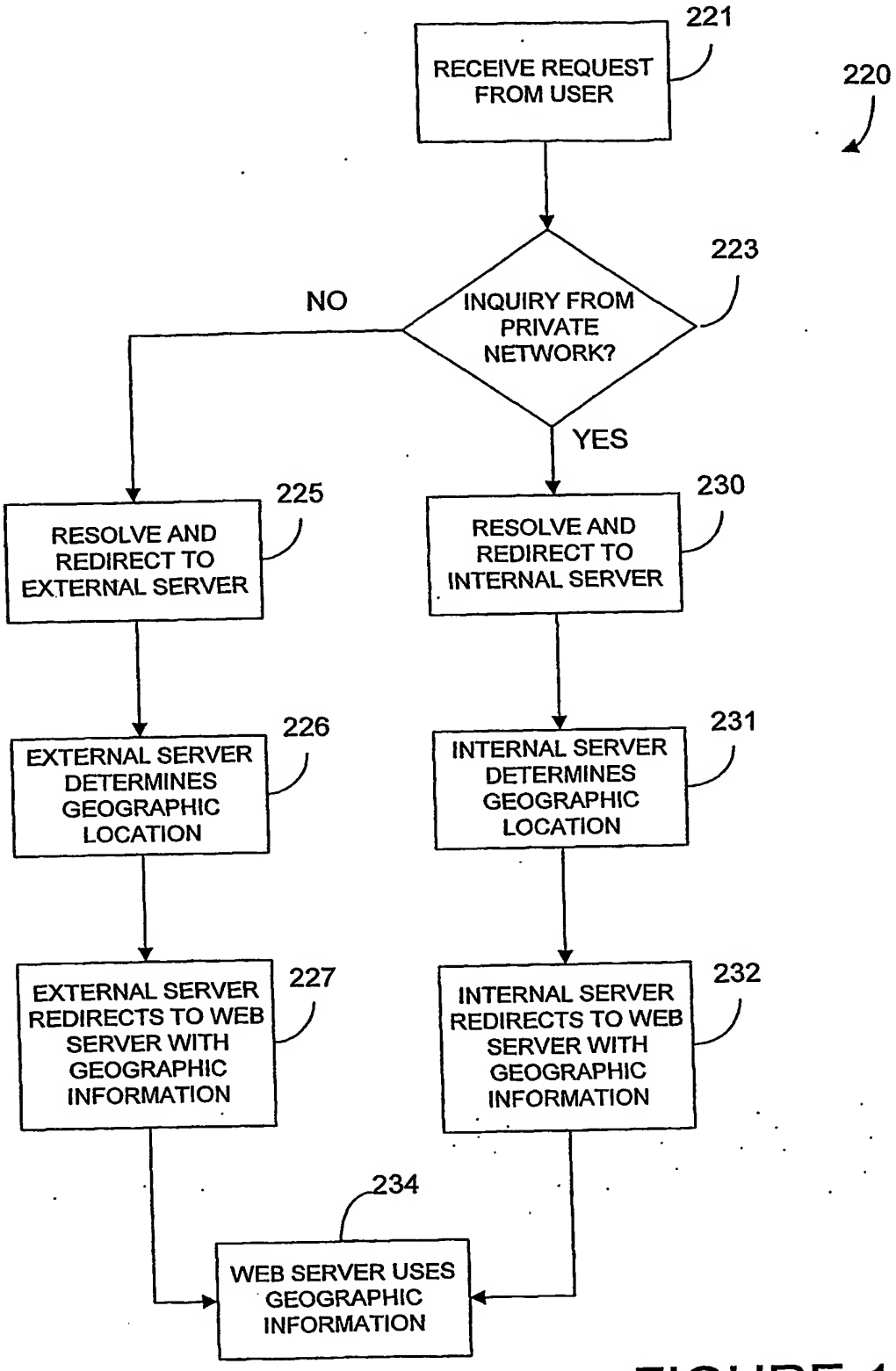
221
RECEIVE REQUEST FROM USER
220
223
INQUIRY FROM PRIVATE NETWORK?
NO
YES
225
RESOLVE AND REDIRECT TO EXTERNAL SERVER
230
RESOLVE AND REDIRECT TO INTERNAL SERVER
226
EXTERNAL SERVER DETERMINES GEOGRAPHIC LOCATION
231
INTERNAL SERVER DETERMINES GEOGRAPHIC LOCATION
227
EXTERNAL SERVER REDIRECTS TO WEB SERVER WITH GEOGRAPHIC INFORMATION
232
INTERNAL SERVER REDIRECTS TO WEB SERVER WITH GEOGRAPHIC INFORMATION
234
WEB SERVER USES GEOGRAPHIC INFORMATION

FIGURE 18